

# 2-Part Epoxies

Permabond 2-part epoxy adhesives are suitable for bonding a wide variety of materials. Available with a range of different cure speeds, Permabond epoxies have been developed to offer a high standard of performance for demanding bonding applications.

## Substrates

Permabond 2-part epoxy adhesives will bond most engineering materials. They form excellent structural bonds to a wide variety of materials including metals, composites, wood and some plastics.

## Durability

Their excellent chemical and water resistance makes them suitable for harsh environmental conditions. These epoxies are an excellent choice for high-strength structural bonding.

## Applications

Epoxies are widely used in the marine, automotive, aerospace, appliance, general assembly and construction industries. Applications are diverse and include bonding aerospace structures, motor housings and mounting brackets, tools and kitchen counter tops amongst many others.

## Material selection

The high strength and durability achieved using these adhesives provides designers with greater design freedom in their selection of substrate materials.

## Process

These 1:1 mix epoxies can be easily dispensed with a static mixing nozzle. No measuring or hand mixing is needed. Heat cure is not needed as the adhesives will cure at room temperature. For cure times faster than those stated on the chart overleaf, heat can be used to increase the speed of cure.

## Joint Design

Joint design possibilities are greatly improved by the high shear and peel strength of joints bonded with these adhesives and by the increased stress distribution that they offer.

## Benefits

- High peel strength increases design versatility.
- 1:1 mix ratio of most Permabond 2-component epoxies reduces equipment costs.
- Durability increases material choices.
- Rapid cure increases production rates.
- Room temperature cure reduces equipment & energy costs.
- Solvent free formulation improves workplace safety.
- Low odour improves workplace environment.



**Permabond**<sup>®</sup>  
Engineering Adhesives

## Permabond Epoxy Adhesives Comparison Chart

This table represents a selection of the complete range of Permabond two-part epoxy adhesives. For more detailed technical information and product Material Safety Data Sheets, visit [www.permabond.com](http://www.permabond.com). To discuss your specific application requirements, please call the Permabond Helpline and our technical advisors will recommend the best adhesive for you or discuss the development of a new grade or product modification to meet your technical requirements.

Grade	Description	Colour	Mixed Viscosity (mPa.s)	Maximum Gap Fill (mm)	Pot Life	Handling Strength	Shear Strength (MPa)	Peel Strength (N/25mm)	Service Temperature (°C)
ET500	Very fast curing, clear, non-yellowing.	Clear, transparent	17,000	2.0	3-4 mins	4-6 mins	12-14	45-60	-40 to +80
ET505	Tough, structural multipurpose adhesive for bonding a wide variety of materials.	Amber	19,000	2.0	1-2 hours	2-3 hours	10-21	60-80	-40 to +80
ET510	Rapid curing and flexible for excellent impact and peel resistance.	Amber	21,000	2.0	10-15 mins	15-25 mins	8-12	70-90	-40 to +80
ET515	Clear and flexible, again with excellent peel and impact resistance.	Slightly amber	20,000	2.0	10-15 mins	15-25 mins	8-12	60-80	-40 to +80
ET536	Toughened, thixotropic, excellent gap fill and flow control. WRAS approval for contact with drinking water.	Grey	290,000	5.0	30-45 mins	60-90 mins	15-24	60-80	-40 to +80
ET538	Toughened, thixotropic, excellent gap fill and flow control. Long pot life for large assemblies.	Grey	195,000	5.0	2-3 hours	3-4 hours	18-20	60-80	-40 to +80
ET540	Toughened, thixotropic, excellent gap fill and flow control, improved temperature resistance.	Amber	640,000	5.0	60-90 mins	90-120 mins	14-18	60-80	-40 to +120°C (continuous) +150°C (peak)

Cure-speed varies depending on ambient temperature, the cure times quoted above were tested at 20°C. Generally a rise of 8°C will halve the cure speed (conversely a drop of 8°C will double the cure speed).

For further information please contact Permabond for individual technical and safety data sheets.

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